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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|----------------------|------------------|
| 10/722,488 | 11/28/2003 | Yasushi Shinjo | 245847US0RDDIV | 1101 |
| 22850 | 7590 | 05/05/2004 | EXAMINER | |
| OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314 | | | RODEE, CHRISTOPHER D | |
| | | ART UNIT | PAPER NUMBER | |
| | | 1756 | | |
| DATE MAILED: 05/05/2004 | | | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|---------------------------------|------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 10/722,488 | SHINJO ET AL. |
| | Examiner Christopher D RoDee | Art Unit 1756 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on _____.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 17-19 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
 5) Claim(s) ____ is/are allowed.
 6) Claim(s) 17-19 is/are rejected.
 7) Claim(s) ____ is/are objected to.
 8) Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on ____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on ____ is: a) approved b) disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. 10/023,768.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) The translation of the foreign language provisional application has been received.
 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

| | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____ . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

The copending application in the IDS of 1 March 2004 has been considered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Till *et al.* in US Patent 5,890,045 in view of Suda *et al.* in US Patent Application Publication 2002/0006571.

Till discloses an image forming method where a photoreceptor belt **18** is imaged and developed by a liquid developer so that colored toner particles are deposited on the surface of the photoreceptor belt according to the latent image (Abstract; col. 4, l. 48-57; col. 5, l. 63 - col. 6, l. 51). The liquid toner has colored resin particles dispersed in a liquid carrier (col. 5, l. 45-47). The developed images are then transferred to an elastic intermediate belt **80**. The photoreceptor belt is driven at a speed $V_{P/R}$ while the intermediate belt is driven at a speed of V_I . The reference states that the speeds $V_{P/R}$ and V_I are substantially equivalent (col. 8, l. 40-55), but this statement does indicate that some small variation in speed is permissible as long as it is not significant. A small variation in transport speed between $V_{P/R}$ and V_I would appear to give a shear pressure to the developed image. The reference does not specifically disclose the

claimed toners, but does indicate that color toners are useful, such as subtractive colored toners (col. 5, l. 63 - col. 6, l. 8).

Suda discloses a liquid toner comprising a liquid carrier and dispersed in the carrier liquid toner particles having a binder resin and a colorant (Abstract; ¶ [0006]). Useful colorants include subtractive colorants, such as those disclosed in ¶ [0014]. The surface of the toner particles have inorganic particles attached or impregnated (¶ [0012]). Useful resins include thermoplastic resins (¶ [0017]) and carrier liquids are aliphatic hydrocarbons or silicon oils, among others (¶ [0018]). The resin is insoluble in the carrier liquid at room temperature (¶ [0019]). The inorganic fine particles attached or adhered to the toner particles include silicas and titanium oxides, which are seen as pigment particles because they insoluble, generally white colorants. The liquid toner does not exhibit high agglomeration and is excellent in dispersion capabilities (¶ [0005]).

Suda does not specify the density of the pigment dispersed in the resin versus the density of inorganic particles attached or impregnated in the surface of the particle, but because the pigment is present throughout the body of the resin particle (the entire volume) and the inorganic particles are present only in the surface area (a smaller volume) (see ¶ [0012]) and because the amount of the pigment and inorganic particles are nearly the same in Example 1, the artisan would have expected the density of the pigment to be less than the density of the inorganic particles (also a pigment as required by the claims). Alternatively, the artisan would have found it obvious to have a higher density of inorganic particles at the surface portion of the toner particle because there are only three possible options for the respective densities (high at surface portion, lower at surface portion, or the same). Given three options it would have been obvious for the artisan to choose any one as one practiced the invention.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the liquid toner of Suda in the invention of Till because Till desires a liquid toner that will accurately form a color or multicolor toner image and Suda discloses a specific liquid toner toner that has excellent dispersion characteristics, resulting in improved image quality. The artisan would have found it obvious to minimize the difference in $V_{P/R}$ and V_I , such as a 1 % difference, in order to reduce the image distortion during transfer. The artisan would also have found it obvious to optimize the applied pressure between the photoreceptor belt and image transfer belt to ensure proper and sufficient transfer of the toner image.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The unapplied art cited with this Office action relates to the removal of carrier liquid from the surface of a latent image carrying member by a roller, but the roller is not an intermediate transfer member in either Landa or Uezono.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher D RoDee whose telephone number is 571-272-1388. The examiner can normally be reached on most weekdays from 6 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



CHRISTOPHER RODEE
PRIMARY EXAMINER

cdr
30 April 2004